

CDR2 siRNA (h): sc-93501

BACKGROUND

CDR2 (cerebellar degeneration-related protein 2), also referred to as Yo or CDR62, is a 545 amino acid protein that is associated with the development of paraneoplastic cerebellar degeneration (PCD). PCD, an immune-mediated syndrome, belongs to a heterogeneous group of rare paraneoplastic neurologic disorders affecting the neurological system. PCD is characterized by subacute cerebellar ataxia and occurs mainly in patients with ovarian, uterine, fallopian tube or breast cancer. Patients with ovarian or breast cancer develop an immune response against cancer cell-expressed CDR2 and Purkinje neuron-expressed CDR2. The presence of the anti-CDR2 antibody in patients with PCD symptoms warrants an aggressive approach to diagnosis and treatment of the underlying cancer.

REFERENCES

1. Siniscalco, M., et al. 1991. Physical and genetic mapping of the CDR gene with particular reference to its position with respect to the FRAXA site. *Am. J. Med. Genet.* 38: 357-362.
2. Peterson, K., et al. 1992. Paraneoplastic cerebellar degeneration. I. A clinical analysis of 55 anti-Yo antibody-positive patients. *Neurology* 42: 1931-1937.
3. Giometto, B., et al. 1997. Sub-acute cerebellar degeneration with anti-Yo autoantibodies: immunohistochemical analysis of the immune reaction in the central nervous system. *Neuropathol. Appl. Neurobiol.* 23: 468-474.
4. Tanaka, M., et al. 1998. Cytotoxic T cells react with recombinant Yo protein from a patient with paraneoplastic cerebellar degeneration and anti-Yo antibody. *J. Neurol. Sci.* 161: 88-90.
5. Shams'ili, S., et al. 2003. Paraneoplastic cerebellar degeneration associated with antineuronal antibodies: analysis of 50 patients. *Brain* 126: 1409-1418.
6. Stich, O., et al. 2003. Qualitative evidence of anti-Yo-specific intrathecal antibody synthesis in patients with paraneoplastic cerebellar degeneration. *J. Neuroimmunol.* 141: 165-169.
7. Santillan, A., et al. 2006. Paraneoplastic cerebellar degeneration in a woman with ovarian cancer. *Nat. Clin. Pract. Oncol.* 3: 108-12; quiz 1 p following 112.

CHROMOSOMAL LOCATION

Genetic locus: CDR2 (human) mapping to 16p12.2.

PRODUCT

CDR2 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see CDR2 shRNA Plasmid (h): sc-93501-SH and CDR2 shRNA (h) Lentiviral Particles: sc-93501-V as alternate gene silencing products.

For independent verification of CDR2 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-93501A, sc-93501B and sc-93501C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

CDR2 siRNA (h) is recommended for the inhibition of CDR2 expression in human cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

GENE EXPRESSION MONITORING

CDR2 (W-12): sc-100320 is recommended as a control antibody for monitoring of CDR2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor CDR2 gene expression knockdown using RT-PCR Primer: CDR2 (h)-PR: sc-93501-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.